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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,013	08/01/2006	Wolfgang Voss	SCHULTE	1385

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02/07/2011

EXAMINER

MCCALISTER, WILLIAM M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,013	Applicant(s) VOSS, WOLFGAN	
	Examiner WILLIAM MCCALISTER	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-22 and 24-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-22 and 24-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/12/2010 has been entered.

2. Claims 1-14 and 23 have been cancelled. Claims 15-22 and 24-33 are pending for consideration.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 15 and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Voss (US 5,462,076).

Regarding claim 15, Voss discloses a pressure limiting valve device for protecting hydraulic pressure packs against an overload and hydraulic props against falling rocks in underground mining and tunnel construction comprising

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a valve housing (3, 34),
a consumer connection (9, specifically at 15) coupled to the valve housing,
a pressurized fluid outlet (the downstream end of outlet port 19) in the consumer connection for allowing flow of pressurized fluid,

a movable closure (24) in the valve housing for ensuring separation of the pressurized fluid outlet and the consumer connection,

a flow gap (space 14, 18, 40) between the movable closure and the consumer connection,

a valve spring (4) in the valve housing for exerting force such that the movable closure is movable against the force exerted, and

a seal (27, 32) **on** the movable closure (i.e., **in contact with** the movable closure; notably the seal is not claimed to be "in" the movable closure, as required of dependent claim 18) for securing the flow gap, the valve housing and the consumer connection remaining connected when the overload occurs for discharging the pressurized fluid (members 24 and 29 move toward the spring to relieve pressure from entrance 15 into the outlet 19 by way of the housing), wherein the seal comprises a groove (32) and a non pre-tensioned seal ring (27, which is not disclosed to be pre-tensioned) with limited flexibility (inherently), the seal ring having a first side facing the consumer connection (the radially outer side), a second side opposite the first side away from the consumer connection (the radially inner side), top and bottom opposite sides between the first side and the second side, the groove having a shape for allowing partial or total flow of the pressurized fluid into the groove and around the seal ring (the

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groove is capable of allowing such flow, for instance where the fluid pressure is much greater than the resilience of the o-ring), and wherein the seal ring is displaceable towards the consumer connection (i.e., radially outwardly) due to flow of the pressurized fluid on sides of the seal ring including the second side away from the consumer connection (pressure acting on the radially inner, open side of the groove, for example due to fluid from radial bores 26 sliding past the seal ring when the valve opens, would tend to stretch the seal ring in a radially outward direction, toward the first side).

Note that the phrase “disposed in the groove without pre-stressing” has been interpreted as a “product-by-process limitation” (see MPEP 2113), and accordingly this limitation does not distinguish over the prior art because “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In the instant case, the absence of pre-stressing during the process of disposing the seal ring in the groove does not necessarily result in any structural differences to distinguish over Voss, since the end products would not necessarily have been different. For instance, other unclaimed acts of stressing or thermally relaxing a seal ring after it is disposed in the groove could be performed to achieve any state of seal ring tension which Voss may be determined to disclose.

Regarding claim 19, Voss also discloses a blind hole (11) in the consumer connection, and connection bores (26) connecting the blind hole and the flow gap, where the groove (32) and the seal ring (27) partially extend into opening cross-sections of the connection bores (26) (when in the position shown in FIG 1).

Regarding claim 20, Voss discloses the connection bores (26) to be radial bores.

Regarding claim 21, Voss discloses the blind hole (11) to be disposed in a connection portion of the consumer connection (9) connected to the valve housing, and the radial bores (26) to be disposed proximal an end side of the blind hole at a height of the flow gap (when the valve is open).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 15, 18-21, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss.

Regarding claim 15, Voss substantially discloses the invention as claimed. Should it be determined that Voss does not meet the structural implication of the product-by-process limitation “disposed in the groove without pre-stressing” or that the seal ring is not “non

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pre-tensioned”, it would have been obvious to one of ordinary skill in the art at the time of invention to dispose the seal ring in the groove without pre-stressing the seal ring (i.e., without stretching or radial expansion of the seal ring), for instance to ensure that the seal ring remains in the groove prior to insertion of the piston member (24).

Regarding claim 18, Voss discloses the device to further comprise a system pressure fluid (at 15), and discloses the groove (32) and seal ring (27) to be disposed in bottom part (37) to thereby form a seal between the movable closure (24) and bottom part (37). However, Voss does not disclose the groove (32) and seal ring (27) to be disposed in the movable closure (24). It would have been obvious to one of skill in the art at the time of invention to place the groove (32) and seal ring (27) in the moveable closure, to predictably form a similar seal between the movable closure (24) and bottom part (37). As such, the system pressure fluid would act on the seal ring when the valve is in a closed position (inherently, by way of the tolerance between 24 and 37, which allows 24 to move within 9).

Regarding claims 19-21, see the mapping of the elements set forth under paragraph 3 above.

Regarding claims 26 and 27, Voss discloses the invention as claimed with exception to the materials from which the seal ring is formed. it would have been obvious to one having ordinary skill in the art at the time of invention to form the seal ring from plastic

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and/or polyamide, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 41&the seal ring is of plastic material.

7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss in view of Farley (US 5,695,197).

Voss discloses the invention as claimed with exception to the shape of the seal ring. Farley teaches that it was known in the art at the time of invention to form such an o-ring (50) with a square (and therefore also rectangular) cross-section. To predictably create larger sealing areas between the o-ring and the various surfaces which the seal ring contacts, it would have been obvious to use an o-ring with a square cross-section, as taught by Farley.

8. Claims 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss in view of Farley, and further in view of Albertson (US 6,290,235).

Regarding claim 22, Voss substantially discloses the invention as claimed, including first and second opposing sides of the groove (the top and bottom sides of the groove, as seen in Figure 1) and a base (the radially outer wall, as seen in FIG 1) between the first and second opposing sides. Voss does not disclose a beveled funnel-type partition

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along the first side and the base. Albertson teaches that it was known to use a beveled funnel-type partition (202b) along a similar first side and base to accommodate a square seal (140). To similarly accommodate a square seal, it would have been obvious to use a beveled funnel-type partition in Voss' groove, as taught by Albertson.

Regarding claim 24, it would have been obvious to one of ordinary skill in the art at the time of invention to form a second bevel, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 70.

Regarding claim 25, the bevels are considered to be spacers because they space the seal ring from the walls.

9. Claims 15 and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss in view of de Launay (US 4,176,680).

Regarding claims 15 and 28, Voss substantially discloses the invention as claimed, including a connection nipple (generally the protruding structure at the top of FIG 1) on the consumer connection.

Voss discloses an inner moveable closure member (24) without a piston-type attachment in the movable closure. de Launay teaches that it was known in the art to

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achieve a similar valving effect using a hat-shaped movable closure (44) with a piston-type attachment (which defines radial bores 36) located in the movable closure. To similarly achieve the valving effect required of Voss, it would have been obvious to use a hat-shaped movable closure with a piston-type attachment therein, as taught by de Launay, instead of Voss' movable closure member (24).

Voss does not disclose the claimed seal as applied in this analysis. de Launay teaches a seal ring (56) and a seal groove (58) on the movable closure, where the groove has a first side (the radially inner side), a second side (the radially outer side), and top and bottom opposite sides, the groove having a shape for allowing partial or total flow of the pressurized fluid into the groove and around the seal ring (the groove is capable of allowing such flow, for instance where the fluid pressure is much greater than the resilience of the o-ring), and wherein the seal ring is displaceable towards the consumer connection (i.e., radially inwardly) due to flow of the pressurized fluid on sides of the seal ring including the second side away from the consumer connection (pressure acting on the radially outer side of the groove, for example due to back pressure through the valve would tend to stretch the seal ring in a radially inward direction, toward the first side.) It would have been obvious to use de Launay's seal ring and groove when using de Launay's closure member to ensure proper sealing of the valve.

Regarding claim 29, Voss discloses outlet ports (19) connected to the pressurized fluid outlet, wherein the flow gap extends to the outlet ports.

Regarding claims 30-32, it would have been obvious to utilize a rounded corner and different shaped edges on the piston and seal ring, since such a modification would have involved a mere change in the shape of a component. A change in shape, without more, is generally recognized as being within the level of ordinary skill in the art. In re Dailey, 357 F.2d 669, 149 USPQ 457 (CCPA 1966).

Regarding claim 33, de Launay discloses the movable closure (44) to comprise a top hat portion (the top of member 44), a spring disk (the radially extending portion of member 44), and a top hat brim (the downwardly extending portion which extends from the spring disk) moveable over radial bores (36) against the force of a similar valve spring. Where Voss is modified by de Launay, a bottom side of de Launay's top hat brim and a top side of Voss' connection nipple would enclose the flow gap.

Response to Arguments

10. Applicant's arguments filed 11/12/2010 have been fully considered but they are not persuasive.

- a. Applicant argues that Voss' seal 27 is not pressed against piston 24 by pressurized fluid because it comprises a hard shore material (Remarks, pp. 9, 12). Specifically, Applicant reasons that because o-ring 30 is softer than seal 27, seal 27 is unaffected by the pressure medium. In response, applicant's

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conclusion does not follow. All materials, no matter what degree of hardness, are affected by pressure to some extent.

b. Applicant argues that Voss' description of seal 12 teaches away from the claimed flow gap (Remarks, p. 9). In response, the flow gap is seen as anticipated by Voss, as mapped above. "Teaching away" is seen as relevant to obviousness analyses, and it is not understood how a single reference can be seen to teach away from itself.

c. Applicant suggests it is the examiner's general position that Voss does not teach the claimed seal (Remarks, p. 9). In response, Applicant appears to be conflating the obviousness analysis (Voss in view of de Launay) with the anticipation analysis (Voss alone). The anticipation analysis of Voss is entirely independent of the obviousness analysis of Voss. The obviousness analysis should not be taken by applicant to inform the anticipation analyses. Applicant is encouraged to contact the examiner by telephone if further explanation is required.

d. Applicant argues that claim 15 requires a sealing ring that could not expand in both radial directions upon the application of fluid pressure. (Remarks, pp. 5-8) The examiner disagrees. In this regard, claim 15 only requires "wherein the seal ring is displaceable towards the consumer connection due to flow of the pressurized fluid on sides of the seal ring including the second side away from the consumer connection". Although it is agreed that the mode of operation of this claimed feature as disclosed by Applicant does not result in simultaneous

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expansion of the o-ring in both radial directions, limitations from the specification are not read into the claims. (This also goes for Applicant's arguments describing the various distinctions between Voss and the disclosed invention, Remarks, pp. 5-8, 10-11). Further, Applicant does not explain how Voss' seal would necessarily expand in both radial directions upon the application of fluid pressure, as was agreed to in the interview in order to overcome the Voss reference.

e. Regarding the argument at page 10 of the Remarks, it also noted that the limitation "beveled funnel type partition to accommodate a square seal" is seen as reciting a capability of the funnel type partition, and not as reciting a square seal.

f. Also, Voss is not seen as demanding a certain shape of o-ring, and Applicant has provided insufficient evidence to support such-a contention, and thus the obviousness analysis utilizing the Farley reference is still seen as proper.

g. Applicant also asserts that Voss' seal ring is inserted by way of a mechanical pretension (Remarks, p. 5). However there is no evidence of record upon which the examiner could reach such a conclusion.

h. In response to applicant's arguments against the references individually (Remarks, pp. 14-15), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See

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In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM MCCALISTER whose telephone number is (571)270-1869. The examiner can normally be reached on m-f, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hepperle can be reached on (571)272-4913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WILLIAM MCCALISTER/
Examiner, Art Unit 3753

/STEPHEN M HEPERLE/
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2/3/2011